



ATTACHMENT A

Remarks

In response to the Office Action mailed on March 09, 2007, reconsideration of the rejection of the claims is respectfully requested.

A. Objection to Specification

The title of the invention has been objected to as being not indicative of the invention to which the claims are directed.

In response, the title section of the specification has been amended to present a new title that is more indicative of the invention to which the claims are directed.

B. Rejection of Claims under 35 U.S.C. § 101

Claims 30 – 34 have been rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter in that “software per se” is non-statutory.

Claims 30 – 34 have been amended recite a “computer readable medium having computer executable instructions for performing a method for digitizing data written to an electronic ink display.” It is respectfully submitted that claims 30 – 34 now recite statutory subject matter.

C. Rejection of Claims under 35 U.S.C. § 112

Claims 4, 9 – 10, and 30 – 34 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Various antecedent basis issues were identified in claims 4, 9 – 10, and 32 – 34. Claims 4, 9 – 10, and 32 – 34 have now been amended to address each of the identified antecedent basis issues.

Claim 30 was rejected as being indefinite for reciting “a program comprising a storage medium ...” As indicated above, amended claim 30 now recites “a computer readable medium having computer executable instructions for performing a method”

It is respectfully submitted that amended claims 4, 9 – 10, and 30 – 34 overcome the rejection under 35 U.S.C. 112 , second paragraph, and withdrawal of the rejection is respectfully requested.

D. Rejection of Claims under 35 U.S.C. § 102

Claims 1 – 3, 5, 6, 8, 11 – 14, 16, 18 – 21, 23 – 25, and 30 have been rejected under 35 U.S.C. 102(e) as being anticipated by Mikkelsen (U.S. Patent No. 6,559,820). This rejection is respectfully traversed.

Claim 1 has been amended to make it clear that the “reading” step recited therein is performed electronically and claim 1 thus, as amended, recites a method for digitizing data, comprising the following steps:

- setting an element of an electronic ink display to one of a plurality of display states;
- modifying the display state of the element by writing to the display with an external device; and
- electronically reading the element to determine if the display state has been modified.

Mikkelsen discloses a display with an insulative layer with electrical properties which have been selected so that the display can be addressed with a stylus and which minimizes the effects of stray triboelectrically generated charges; as well as a method of addressing such a display by depositing charges on a surface of the display, maintaining sufficient charges to effect an image change, and then removing the charges (See the Abstract).

It is alleged in the Office Action that Mikkelsen discloses a method for digitizing data comprising: setting an element (200) of an electronic ink display to one of a plurality of display states (e.g. black or white, see col. 6, lines 9 – 11, and lines 32 – 34); modifying the display state of the element by writing to the display with an external device; and “reading (e.g. leaves a charge trail that activate the display state of the element) the element to determine if the display state has been modified (see col. 5, lines 58 – 60).”

It is not disputed that Mikkelsen discloses applying a charge at the surface of an insulative layer of a triboelectrically addressable electric paper by dragging a human finger or a stylus on the surface of the insulative layer, or that the display can be erased

by using a “eraser” that applies a charge opposite to the triboelectric charge applied by the user to address the display. However, it is respectfully submitted that the cited passages of Mikkelsen do not teach or suggest electronically reading the element to determine if the display state has been modified, as recited in amended claim 1.

Col. 5, lines 58 – 60 of Mikkelsen state that “[t]he action of dragging a finger on the transparent insulative layer 110 leaves a charge trail that activates the gyrricon rotatable elements 200, causing them to rotate one portion toward the surface of the transparent insulative layer 110.”

It is respectfully submitted that the disclosure of “leaving a charge trail” is not a teaching of “electronically reading an element to determine if the display state has been modified.” Further, there is no teaching or suggestion in Mikkelsen of electronically reading the charge trail, or even an element of the charge trail, to determine if the display state has been modified. Thus, it is respectfully submitted that Mikkelsen does not teach or suggest the method for digitizing data as recited in claim 1.

With respect to independent claim 14, the Office Action points out that the claim only differs from claim 1 in the limitation “bistable display element ...” and alleges that Mikkelsen teaches that the display elements are bistable.

Claim 14 has also been amended to recite the step of “electronically reading the display element to determine the display state.” Thus, for the reasons discussed with respect to the patentability of claim 1 and, in particular, with respect to the limitation “electronically reading the display element to determine if the display state has been modified” recited in claim 1, it is respectfully submitted that claim 14 is allowable over Mikkelsen.

Independent claim 30, as amended, recites a computer readable medium having computer executable instructions for performing a method for digitizing data written to an electronic ink display, and provides that the computer readable medium includes instructions operable to cause at least one programmable processor to:

- set an element of the electronic ink display array to one of a plurality of persistent display states based on display data in memory;
- wait in a power down or power off mode of operation for a signal to initiate a read operation;
- read the element to determine the display state; and

store data for the display state read in the memory.

With respect to independent claim 30, the Office Action cites to column 1, lines 52 – 53 of Mikkelsen, which state that, “[t]hus, electric paper can be used in a computer system display screen or a television.” The Office Action then apparently concludes that since “electric paper can be used in a computer system display screen,” Mikkelsen teaches the computer readable medium having computer executable instructions as claimed in claim 30.

It is respectfully submitted that such a conclusion cannot be logically drawn from the teaching that “electric paper can be used in a computer system display screen” because, as discussed above, Mikkelsen does not teach or suggest electronically reading an element of an electronic ink display. Thus, Mikkelsen does not teach or suggest a computer readable medium including instructions operable to cause at least one programmable processor to read an element to determine the display state, and store the display state read in a memory.

Claims 2, 3, 5, 6, 8, 11 – 13, 16, 18 – 21 and 23 – 25 depend from either claim 1 or claim 14 and, therefore, are allowable for at least the reasons provided in support of the allowability of the claims from which they depend. Additionally, many of the dependent claims are separately patentable.

For instance, claim 3 provides that reading the element to determine if the display state has been modified comprises detecting an electrical property related to the display state of the element. The Office Action again attempts to equate “leaves a charge trail” with “reading the element to determine if the display state has been modified.” Further, the Office Action attempts to equate the fact that Mikkelsen discloses that the charge trail activates “rotatable elements 200, causing them to rotate one portion toward the surface of the transparent insulative layer 110” (col. 5, lines 60 – 62) with “detecting an electrical property related to the display state of the element” (as recited in claim 3). It is respectfully submitted that disclosing that a charge causes a rotatable element to rotate is not the same as detecting an electrical property related to a display state of an element because “causing a rotation” is not the same as “detecting

an electrical property.” Thus, Mikkelsen simply does not teach or suggest electrically reading the element to determine if the display state has been modified.

Claims 5, 6 and 8 depend from claim 3 and further recite aspects of the electrical property that is detected in reading the element. Thus, claims 5, 6 and 8 are further allowable over the Mikkelsen reference.

Likewise, claims 18 – 21 also further recite aspects of reading the element of the display to obtain a display state, and, are therefore further distinguishable from the Mikkelsen reference.

E. Rejection of Claims under 35 U.S.C. § 103

1. Mikkelsen in view of Perrone

Claims 15 and 26 – 28 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Mikkelsen in view of Perrone (U.S. Patent No. 6,603,881). This rejection is respectfully traversed.

The Perrone reference recites a personal digital notepad (PDN) device that includes an electronic stylus having an inking tip which allows a user to write on a piece of paper placed over the digitizing tablet (column 1, lines 46 – 54). As the writer writes on the paper, the digitizing table generates positional data representing the coordinates of the electronic stylus in relation to the digitizing table by detecting, for example, RF (radio frequency) emissions generated by the stylus as a user applies the stylus to the surface of the tablet (column 1, lines 54 – 59). The Perrone reference does not disclose any technology beyond disclosing that “the writer writes on a piece of paper placed over a digitizing tablet,” and, moreover, the reference is directed at reordering unconstrained handwriting data and for spatially organizing and formatting machine recognized transcription to allow a machine recognizer to generate and present a full and accurate transcription of unconstrained handwriting in its correct spatial context (column 2, lines 50 – 59).

It is respectfully submitted that the Mikkelsen reference and the Perrone reference are not properly combinable because they address different problems and are directed to different subject matter. More specifically, as discussed above, Mikkelsen discloses a display (electric paper) with an insulative layer with electrical properties

which have been selected so that the display can be addressed with a stylus and which minimizes the effects of stray triboelectrically generated charges; as well as a method of addressing such a display by depositing charges on a surface of the display, maintaining sufficient charges to effect an image change, and then removing the charges (Abstract). As discussed above, Mikkelsen does not teach or suggest electronically reading or digitizing handwriting or other images. The Perrone reference is not concerned with, and does not even suggest the use of, the display (electric paper) of the Mikkelsen reference. Moreover, there is absolutely no explanation in either reference of how the display of Mikkelsen could be used to generate the positional data used in the Perrone reference, so as to arrive at the method and systems recited in claims 15 and 26 – 28. The motivation referred to in the Office Action that “recorded strokes in memory of Perrone can be stored and organized for recognition, and the corresponding recognition results can be accurately placed in the correct spatial context for subsequent display” merely paraphrases an objective of Perrone and is certainly not a reason or motivation to combine Perrone with Mikkelsen. A person of ordinary skill in the art would not only be unmotivated to combine Perrone with Mikkelsen, but would also be unable to make the combination because there is no teaching or suggestion in either reference of how the display of Mikkelsen could generate the positional data used in the Perrone reference.

2. Mikkelsen in view of Jacobson

Claims 4, 7, 9, 10, 17, 22, and 31 – 34 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Mikkelsen in view of Jacobson (U.S. Patent Application Publication No. 2005/0099672). This rejection is respectfully traversed.

The Jacobson reference recites sensing the state of an electrophoretic display (Abstract). More specifically, the relevant portion of the Jacobson reference relates to capsules containing electrophoretic particles, which are translated within the capsule using electrodes, thus changing the appearance of the capsule to a viewer (paragraph [0034]). Electrodes are used to apply a field to the capsule in order to sense its state (paragraph [0034]). For example, “if the particles have a much higher impedance than the dispersing fluid, then a voltage applied to the capsule will be more attenuated if the

particles are nearer the electrodes than if they are not." Paragraph [0042]. Thus, the Jacobson reference describes sensing the state of an electrophoretic display that is dependent on the physical characteristics of electrophoretic particles.

The Mikkelsen reference discloses triboelectrically addressable electric paper having a gyricon substrate including gyricon rotatable elements disposed within the substrate (column 3, line 66 – column 4, line 14). Each gyricon rotatable element has two distinct portions, one black and the other white, and each portion has a distinctive electrical characteristic. Each gyricon rotatable element can be selectively rotated within its respective fluid –filled cavity by applying an electric field to present either the black portion or the white portion to an observer viewing the surface of the sheet. However, there is no discussion or indication that an electrical characteristic of the gyricon rotatable elements can be sensed by electrodes to determine the state of the rotatable elements

It is respectfully submitted that the Mikkelsen reference and the Jacobson reference are also not properly combinable because the two references are concerned with specific, non-combinable technologies. More particularly, there is no teaching or suggestion in the references or otherwise, that the gyricon rotatable elements disclosed in the Mikkelsen reference and the capsules containing electrophoretic particles disclosed in the Jacobson reference are interchangeable for the purposes of either reference, and, therefore, there is no reason that a person of ordinary skill in the art would combine the references.

Further, the reason provided in the Office Action for combining the references is that "it would have obvious to one of ordinary skill in the art at the time the invention was made to have provided reading the element to determine if the display state has been modified comprises measuring the electrical current required to reset the element to a predetermined display state as taught by Jacobson to electrophoretic display of Mikkelsen it would provide the benefit of decaying the image quickly once the addressing voltage to the display is removed, thereby the update image can be viewed in sufficient time." It is respectfully submitted that: 1) Mikkelsen does not disclose an electrophoretic display, as suggested; 2) the "reason" presumes that the "reading electrophoretic display" technology of the Jacobson reference is technically compatible

with the gyricon rotatable element display technology of the Mikkelsen reference; and 3) “decaying the image quickly once the addressing voltage to the display is removed, thereby the update image can be viewed in sufficient time” is not a reason for combining the references.

With respect to the first issue, it is pointed out that Mikkelsen discloses a gyricon rotatable element display and not an electrophoretic display. Therefore, it is respectfully submitted that the statement that “it would have been obvious ... to have provided the reading the element ... as taught by Jacobson to electrophoretic display of Mikkelsen ...” mischaracterizes the Mikkelsen reference.

With respect to the second issue, there is no indication either in the references, or elsewhere in the cited art, that the gyricon rotatable element technology of the Jacobson reference and the “reading the electrophoretic particle” technology of the Mikkelsen reference are combinable or even compatible. To the extent that Official Notice is being taken of the combinability of the technologies, such Official Notice is respectfully traversed.

Finally, with respect to the third issue, it is respectfully submitted that the statement that “the update image can be viewed in sufficient time” does not logically follow the action of “decaying the image quickly once the addressing voltage to the display is removed” because the terms “sufficient time” and “quickly” are ambiguous in this statement, and the statement is not logical. Further, even if the terms were well defined and there was logic to the statement, the statement does not provide a motivation for combining the references because the Mikkelsen reference teaches that the image storage properties of the gyricon act to hold the image on the display device even after the generating charge is removed (column 6, lines 7 – 11). Thus, the statement is clearly contrary to the teaching of the Mikkelsen reference and is not a motivation to combine Mikkelsen with Jacobson.

3. Mikkelsen in view of Perrone and further in view of Jacobson

Claim 29 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Mikkelsen in view of Perrone as applied to claim 27, and further in view of Jacobson. This rejection is respectfully traversed.

For the reasons stated above with respect to the combinability of the Perrone and Jacobson reference individually with the Mikkelsen reference, it is respectfully submitted that the Perrone and Jacobson references are also not jointly combinable with the Mikkelsen reference.

F. New claims 36 - 39

New claims 36 – 39 are directed to a method of operating an electronic ink display having bistable display elements that is closely related to the subject matter of the existing claims. New claims 36 – 39 distinguish over the references cited in the Office Action for at least the reasons set forth above.

END REMARKS